APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/566,677	02/01/2006	Armando Annunziato	09952.0023	9211

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FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER
LLP
901 NEW YORK AVENUE, NW
WASHINGTON, DC 20001-4413

EXAMINER
VU, MICHAEL T

ART UNIT	PAPER NUMBER
2617	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/566,677	ANNUNZIATO ET AL.
	Examiner	Art Unit	
	MICHAEL T. VU	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>01 February 2006</u>.
2a) ☐ This action is **FINAL.**   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>22-42</u> is/are pending in the application.
     4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) <u>22-42</u> is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on <u>01 February 2006</u> is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
     a) ☐ All   b) ☐ Some * c) ☐ None of:
       1. ☐ Certified copies of the priority documents have been received.
       2. ☐ Certified copies of the priority documents have been received in Application No. _____.
       3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

U.S. Patent and Trademark Office
PTOL-326 (Rev. 08-06)   **Office Action Summary**   Part of Paper No./Mail Date 20090218

DETAILED ACTION

Information Disclosure Statement

1.   The information disclosure statement (IDS) submitted on 2/01/2006 is in
compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure
statement is being considered by the examiner.

Drawings

2.   Figures #1-4 should be designated by a legend such as --Prior Art-- because
only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in
compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid
abandonment of the application. The replacement sheet(s) should be labeled
"Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct
any portion of the drawing figures. If the changes are not accepted by the examiner, the
applicant will be notified and informed of any required corrective action in the next Office
action. The objection to the drawings will not be held in abeyance.

The Drawings should be labeled for each of the entities in compliance with 37
CFR 1.121(d) is required.

Claim Objections

3.   Claims 22, 24, 28, 32, 36 and 37 are objected to because of the following
informalities: For example, there are numerous mis-spelled words "optimised",
"analysed", and "characterised" etc., in the claims.

Appropriate editorial corrections throughout the entire application as
needed is required.

4.   Claims 41-42 are objected to under 37 CFR 1.75(c) as being in improper form
because a multiple dependent claims, can not depend on another multiple depend claim
(note claim 5). See MPEP § 608.01(n). Accordingly, the claims 41-42 are not been
further treated on the merits.

        For Example: A cellular communication network comprising at least one
processing module for implementing the planning method of any one of claims 22 to 40.

5.   Dependent Claims 41-42 are objected to because of the following informalities:
"**A** cellular communication network comprising at least one processing module for
implementing the planning....." should change to "**the** cellular communication network
comprising at least one processing module for implementing the planning......"
                Appropriate correction is required.

Claim Rejections - 35 USC § 101

6.   Claims 22-42 are rejected under 35 U.S.C. 101 because: in view of the <u>In re</u>
<u>Bilski</u> decision appearing in MPEP 2106:

        Claim 22 is rejected under 35 U.S.C. 101 as not falling within one of the four
statutory categories of invention. Supreme Court precedent and recent Federal Circuit

decision indicate that a statutory "process" under 35 U.S.C. 101 must (1) be tied to another statutory category (such as a particular apparatus), or (2) transform underlying subject matter (such as an article or material) to a different state or thing. An example of a method claim that would not quality as a statutory process would be a claim that recited purely mental steps. Thus, to qualify as a 101 statutory process, the claim should positively recite the other statutory class (the thing or product) to which it is tied, for example by identifying the apparatus that accomplishes the method steps, or positively recite the subject matter that is being transformed, for example by identifying the material that is being changed to a different state.

Note: the Examiner suggests amending at least one step in claim to positively recite the statutory item or device (mobile, device, base station, controller etc.) that performs the step in order to 'tie' the process to a particular statutory category.

Claim Rejections - 35 USC § 103

7.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8.   Claims 22-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nowak (US 2002/0123354) in view of Rappaport (US 7,295,960).

Regarding claim 22, Nowak teaches a method of planning cellular communication networks [0002], comprising the step of defining at least one cost function to be optimized [0008], said at least one cost function being indicative of the quality of service of at least one class of services rendered by the network [0010-0016],

But Nowak does not clearly teach comprising the step of selecting said at least one class of services as location-based services rendered by said network.

However, Rappaport explicitly teaches comprising the step of selecting said at least one class of services as location-based services rendered by said network (Col. 1, lines 20-40), (Col. 13, line 45 to Col. 14, line 37, and Col. 15, lines 3-43).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Nowak, with Rappaport's teaching, in order to maximizing the quality of service such as locating the mobile terminals in different locations, positions, and areas etc. for saving cost.

Regarding claim 23, Nowak and Rappaport teach the method of claim 22, wherein said cost function indicative of the quality of service of location-based services is based on measuring a dilution of precision of said network (Col. 2, lines 14-39) of Rappaport.

Regarding claim 24, Nowak and Rappaport teach the method of claim 22, comprising the steps of: defining a joint cost function jointly indicative of the quality of service of location-based services (Col. 15, lines 3-26) and at least an additional class of services rendered by said network (Col. 6, lines 11-23), said additional class of services being selected from the group of voice services and data services (Col. 5, line

60 to Col. 6, line 23); and optimising said joint cost function (Col. 5, line 60 to Col. 6, line

23) all of Rappaport.

Regarding claim 25, Nowak and Rappaport teach the method of claim 22,

comprising the steps of: providing a system for measuring at least one actual network

parameter (Col. 4, lines 37-62); and comparing the measurements provided by said

measurement system with the corresponding parameters as planned (Col. 11, line 46 to

Col. 13, line 26) all of Rappaport.

Regarding claim 26, Nowak and Rappaport teach the method of claim 22,

comprising the step of locating at least one critical point in the network where

inadequate quality of service is being provided (Col. 1, line 20-63) of Rappaport.

Regarding claim 27, the combination of Nowak and Rappaport teach the

method of claim 26, comprising the step of generating information items indicative of

counter measures to be carried out in said network in order to dispense with at least

one critical point (Col. 11, line 46 to Col. 13, line 26) all of Rappaport.

Regarding claim 28, Nowak and Rappaport teach the method of claim 22,

wherein said at least one cost function is optimised by using as input data the location

of at least one radiating system associated with one base station in said cellular

communication network (Col. 11, line 46 to Col. 13, line 26) all of Rappaport.

Regarding claim 29, the combination of Nowak and Rappaport teach the

method of claim 28, for planning a cellular communication network over a given area

(Col. 1, line 20-63), comprising the steps of: subdividing said area into sub-areas (Col.

1, line 20-63), one of said sub-areas corresponding to the destination sub-area of a new

base station in said network (Col. 1, line 20-63), the remaining sub- areas being

expected to be affected by the introduction of said new base station (Col. 1, line 20-63);

planning said destination sub-area of the new base station also by evaluating the effects

on said remaining sub-areas (Col. 1, line 20-63); and evaluating the quality of service

resulting from said planning while ascertaining whether such a level of quality of service

is satisfactory (Col. 11, line 46 to Col. 13, line 26) all of Rappaport.

     Regarding claim 30, the combination of Nowak and Rappaport teach the

method of claim 29, wherein said planning involves computing a point-by-point value of

the dilution of precision for all the pixels in the area subject to planning (Col. 11, line46

to Col. 13, line 26) of Rappaport.

     Regarding claim 31, the combination of Nowak and Rappaport teach the

method of claim 30, wherein said planning involves computing a cost function pertaining

to location services only (Col. 1, line 20-63), said cost function being a linear

combination of said dilution of precision and the average and minimum values thereof

(Col. 11, line 46 to Col. 13, line 26) all of Rappaport.

     Regarding claim 32, the combination of Nowak and Rappaport teach the

method of claim 29, comprising the step of optimising a joint cost function for voice, data

and location services (Col. 1, line 20-63) of Rappaport.

     Regarding claim 33, the combination of Nowak and Rappaport teach the

method of claim 29, wherein, if said quality of service is found not to be satisfactory,

comprising the step of re-planning the position of at least one radiating system

associated with one base station in said cellular network (Col. 11, line 46 to Col. 13, line 26) all of Rappaport.

   Regarding claim 34, the combination of Nowak and Rappaport teach the method of claim 33, wherein said at least one radiating system whose position is re-planned associated with one base station is a radiating system associated with said new base station (Col. 1, line 20-63) of Rappaport.

   Regarding claim 35, the combination of Nowak and Rappaport teach the method of claim 25, comprising the steps of: providing a set of network design parameters (Col. 1, line 20-63); obtaining from said measurement system a set of measurements corresponding to said set of design parameters (Col. 1, line 20-63); and locating at least one critical area wherein the quality of service of said location services fails to reach an expected quality of service level as a result of said set of measurements failing to comply with said set of network design parameters (Col. 1, line 20-63), and (Col. 11, line46 to Col. 13, line 26) all of Rappaport.

   Regarding claim 36, the combination of Nowak and Rappaport teach the method of claim 35, comprising the steps of: selecting a service scenario; and selecting at least one location system as the one most affected by the variations in the network parameters being analysed (Col. 2, lines 14-39) of Rappaport.

   Regarding claim 37, the combination of Nowak and Rappaport teach the method of claim 35, comprising the step of providing a list of points in the network characterised by their quality of service (Col. 11, line46 to Col. 13, line 26) of Rappaport.

Regarding claim 38, the combination ofNowak and Rappaport teach the method of claim 35, comprising the steps of generating and displaying a map of critical points in the area under analysis (Col. 4, lines 37-52), and (Col. 8, line 66 to Col. 9, line 35) of Rappaport.

Regarding claim 39, Nowak and Rappaport teach the method of claim 22, comprising the step of providing a remote deployment module arranged for operating on a sub-set of the network subject to planning (Col. 11, lines 4-35) of Rappaport.

Regarding claim 40, the combination of Nowak and Rappaport teach the method of claim 39, comprising the steps of configuring said remote deployment module for collecting local network data (Col. 11, lines 4-35), pre-validating such measurements and either comparing said measurements with corresponding planning data of a network design sub-set or sending such measurements to a remote module for further processing (Col. 4, lines 37-52), and (Col. 11, line 46 to Col. 13, line 26) all of Rappaport.

Regarding claim 41, Nowak and Rappaport teach A cellular communication network comprising at least one processing module for implementing the planning method of any one of claims 22 to 40, (Col. 11, lines 4-35), and (Col. 11, line46 to Col. 13, line 26) all of Rappaport.

Regarding claim 42, Nowak and Rappaport teach A computer program product capable of being directly loaded in the memory of a computer and including software code portions for performing the steps of the method of any one of claims 22 to 40 when

the product is capable of being run on a computer, (Col. 11, lines 4-35), (Col. 11, line 46

to Col. 13, line 26) all of Rappaport.

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to MICHAEL T. VU whose telephone number is (571)272-

8131. The examiner can normally be reached on 8:00am - 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Charles N. Appiah can be reached on 571-272-7904. The fax phone

number for the organization where this application or proceeding is assigned is 571-

273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

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or 571-272-1000.

/Michael Vu/
Examiner
AU-2617

/Charles N. Appiah/
Supervisory Patent Examiner, Art Unit 2617